

IN THE CLAIMS:

Amend claims 1-4 and add new claims 5-20 as shown in the following listing of claims, which replaces all previous versions and listings of claims.

1. (currently amended) A method for manufacturing ~~[method for]~~ a semiconductor device, comprising the steps of: ~~[having oxide films with at least two or more different thicknesses formed on silicon substrate, comprising:]~~

forming a first silicon oxide film having a first thickness on a silicon substrate;

nitriding the first silicon oxide film so that silicon oxynitride forms at an interface between the silicon substrate and the first silicon oxide film; ~~[and]~~

removing ~~[at least a part of]~~ the first silicon oxide film from a part of the silicon substrate using ~~[with]~~ a chemical containing at least an ammonia-hydrogen peroxide solution so that the silicon oxynitride formed at the interface between the part of the silicon substrate and the first silicon oxide film is completely removed; and

forming a second silicon oxide film in at least a portion of the part of the silicon substrate from which ~~[where]~~ the first silicon oxide film ~~[is]~~ and the silicon oxynitride have been removed, the second silicon oxide film having a second thickness different from the first thickness.

2. (currently amended) A method for manufacturing ~~[method for]~~ a semiconductor device according to claim ~~[1,]~~ 2; wherein ~~[in]~~ the nitriding step includes the step of using ~~[of the first silicon oxide film,]~~ an inert gas containing at least an ammonia gas ~~[is used]~~.

3. (currently amended) A method for manufacturing ~~[method for]~~ a semiconductor device, comprising the steps of: ~~[having silicon oxide films with at least two or more different thicknesses formed on a silicon substrate, comprising:]~~

forming a first silicon oxide film having a first thickness on a silicon substrate;

nitriding the first silicon oxide film so that silicon oxynitride forms at an interface between the silicon substrate and the first silicon oxide film; ~~[and]~~

removing ~~[at least a part of]~~ the first silicon oxide film~~[,]~~ from a part of the silicon substrate;

washing the part of the silicon substrate from which the first silicon oxide film has been removed using ~~[with]~~ a chemical containing at least an ammonia-hydrogen peroxide solution~~[,]~~ so that the silicon oxynitride formed at the interface between the part of the silicon substrate and the first silicon oxide film is completely removed; and

forming a second silicon gate oxide film in at least a portion of the part of the silicon substrate from which ~~[where]~~ the first silicon oxide film ~~[is]~~ and the silicon oxynitride are removed, the second silicon oxide film having a second thickness different from the first thickness.

4. (currently amended) A method for manufacturing ~~[method for]~~ a semiconductor device according to claim ~~[3,]~~ 3; wherein ~~[in]~~ the nitriding step includes the step of using ~~[of the first silicon oxide film,]~~ an inert gas containing at least an ammonia gas ~~[is used]~~.

5. (new) A method for manufacturing a semiconductor device according to claim 1; further comprising the step of forming a MOS capacitor on the silicon substrate; and wherein the portion of the first silicon oxide film which has not been removed during the removing step comprises an insulating film of the MOS capacitor.

6. (new) A method for manufacturing a semiconductor device according to claim 5; wherein the second silicon oxide film comprises a gate oxide film.

7. (new) A method for manufacturing a semiconductor device according to claim 1; further comprising the step of forming a MOS capacitor on the silicon substrate; and wherein

the second silicon oxide film comprises an insulating film of the MOS capacitor.

8. (new) A method for manufacturing a semiconductor device according to claim 7; wherein the portion of the first silicon oxide film which has not been removed during the removing step comprises a gate oxide film.

9. (new) A method for manufacturing a semiconductor device according to claim 1; further comprising the step of forming a MOS capacitor on the silicon substrate; and wherein each of the portion of the first silicon oxide film which has not been removed during the removing step and the second silicon oxide film comprises an insulating film of the MOS capacitor.

10. (new) A method for manufacturing a semiconductor device according to claim 3; further comprising the step of forming a MOS capacitor on the silicon substrate; and wherein the portion of the first silicon oxide film which has not been removed during the removing step comprises an insulating film of the MOS capacitor.

11. (new) A method for manufacturing a semiconductor device according to claim 10; wherein the second silicon oxide film comprises a gate oxide film.

12. (new) A method for manufacturing a semiconductor device according to claim 3; further comprising the step of forming a MOS capacitor on the silicon substrate; and wherein the second silicon oxide film comprises an insulating film of the MOS capacitor.

13. (new) A method for manufacturing a semiconductor device according to claim 12; wherein the portion of the first silicon oxide film which has not been removed during the removing step comprises a gate oxide film.

14. (new) A method for manufacturing a semiconductor device according to claim 3; further comprising the step of forming a MOS capacitor on the silicon substrate; and wherein each of the portion of the first silicon oxide film which has not been removed during the removing step and the second silicon oxide film comprises an insulating film of the MOS capacitor.

15. (new) A method for manufacturing a semiconductor device, comprising the steps of:

forming a first silicon oxide film on a semiconductor substrate;

subjecting the first silicon oxide film to an atmosphere containing at least an ammonia gas so that silicon oxynitride forms at an interface between the semiconductor substrate and the first silicon oxide film;

completely removing the first silicon oxide film and the corresponding silicon oxynitride from a portion of the semiconductor substrate; and

forming a second silicon oxide film on the portion of the semiconductor substrate from which the first silicon oxide film and the silicon oxynitride have been completely removed.

16. (new) A method for manufacturing a semiconductor device according to claim 15; wherein the removing step comprises a first step of completely removing the first silicon oxide film from the portion of the semiconductor substrate, and a second step of washing the portion of the semiconductor substrate from which the first silicon oxide film has been removed using a chemical containing at least an ammonia-hydrogen peroxide solution to completely remove the silicon oxynitride formed at the interface between the portion of the semiconductor substrate and the first silicon oxide film.

17. (new) A method for manufacturing a semiconductor device according to claim 16; wherein the first step comprises the step of using an hydrofluoric acid to completely remove the first silicon oxide film from the portion of the semiconductor substrate.

18. (new) A method for manufacturing a semiconductor device according to claim 15; wherein the removing step comprises the step of removing the first silicon oxide film from the portion of the semiconductor substrate using a chemical containing at least an ammonia-hydrogen peroxide solution so that the silicon oxynitride formed at the interface between the portion of the semiconductor substrate and the first silicon oxide film is completely removed.

19. (new) A method for manufacturing a semiconductor device according to claim 15; wherein the nitriding step includes the step of using an inert gas containing at least an ammonia gas.

20. (new) A method for manufacturing a semiconductor device according to claim 15; wherein the semiconductor device comprises a MOS transistor; and wherein the first silicon oxide film comprises a gate oxide film of the MOS transistor.